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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PAUL, ANTONY M	

ART UNIT	PAPER NUMBER
2837	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,302	DUARTE ET AL.	
	Examiner	Art Unit	
	ANTONY M. PAUL	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 April 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/06/2006, 9/20/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

NON-FINAL REJECTION

Objection to Specification

1. The abstract of the disclosure is objected to because designation numeral [11] for control unit do not match with the drawings, Reference numeral [10] for starting circuit is not shown in the drawings. Correction is required. See MPEP § 608.01(b).

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show reference numeral for a starting circuit and incorrect numeral for control unit as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections 35 USC§ 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5 thru 8, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Bogwicz et al. (5,892,349).

In regard to claim 1, Bogwicz et al. disclose in figs.1A-B a starting device such as a switch [14] for a single phase induction motor [M] comprising:

-a Stator (such as a motor housing, column 4, lines 16-41),

-Running coil [16], starting coil [42] (column 2, lines 50-55, column 3, lines 9-14),

-Power source [10] supplies current to coils [16, 42] (column 2, lines 40-41).

-Running switch [A] & Starting switch [B] respectively connects running coil [16] and starting coil [42] to a power source [10] (column 2, lines 50-60, column 3, lines 15-21),

-When in a closed condition (normally closed, column 2, lines 60-63), starting switch [B] conducted to an open condition (deactivate, column 3, lines 15-30) upon completion of motor start (see, column 3, lines 36-47),

-Current sensor such as sense resistor [80] (column 11, lines 46-50) connected in series between a power source [10] and a stator such as a motor [M] housing, in order to detect the current level (see column 4, lines 16-41),

-Control unit such as the control circuit (fig.1, microcontroller, column 11, lines 59-62) receive current signals such as motor [M] currents (fig.2, column 4, lines 35-62) from current sensor [80] and said control unit operatively connects said starting switch [B] and running switch [A] in order to instruct the open and closed conditions (deactivation/activation, column 3, lines 15-41),

-The open condition (deactivation, column 7, line 67, column 8, lines 1-9, and lines 41-53) of starting switch [B] defined when the ratio (voltage proportional to current, see column 5, lines 24-44, column 8, lines 54-56, column 12, lines 54-58 & column 13) between present current level (such as a run winding [16] current sensed at current sensing resistor [80]), see fig.1) and starting current level (such as a start winding [42] current sensed at current sensing resistor [80]) reaches a value that is inferior (falls below, column 7; line 67, column 8, lines 1-9, and lines 41-53, column 9, lines 33-36) to a predetermined value (such as a reference voltage [H], column 5, lines 24-43, column 7, lines 28-48), current levels (see explanation above) supplied to stator (such as a motor [M] housing, column 4, lines 16-41) are supplied to a control unit such as a control circuit of fig.1 (column 4, lines 43-50 & column 11, lines 59-62).

In regard to claims 5 and 6, Bogwicz et al. disclose in figs.1A-B a starting device [14], wherein a current sensor [80] is connected in series between a power source [10] and running and starting switches [A,B].

In regard to claim 7, Bogwicz et al. disclose in figs.1A-B a starting device [14], which includes a running capacitor [66] disposed parallel to running and starting switches [A, B] and a starting capacitor [40] disposed in series with the starting coil [42].

In regard to claim 8, Bogwicz et al. teach a starting method using figs.1A-B comprising:

-comparing (comparator [G] compares sensed motor currents, column 1, lines 38-48, column 7, lines 28-45, column 10, lines 56-61) the present current level (such as a run winding [16] current) with a value of a starting current level (such as a start winding [42] current value sensed by current sensor [80]).

-Detection of starting current level and present current level at respective first and second time interval (current sensor [80] senses motor currents at various motor switching points, column 4, lines 34-50 and column 6, lines 58-60). The other limitations of the base claim are explained in the rejection of claim 1.

In regard to claims 10 and 11, Bogwicz et al. teach a starting method using figs.1A-B, wherein the present current level (such as a motor [M] run winding [16] current) is one which supplies a running coil [16] and a starting coil [42] of the stator such as a motor housing (column 4, lines 16-41).

Claim Rejections 35 USC§ 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bogwicz et al. as applied to claim 1 above, and further in view of Aubrey (GB 2088658).

In regard to claim 2, Bogwicz et al. disclose in figs.1A-B a starting device [14] and comprising a voltage sensor such as a comparator [G] (column 7, lines 31-33, fig.1) connected to a power system such as a power source [10] in order to detect voltage level (monitors line voltage, column 7, lines 31-33) in the power system [10]. A control unit such as a control circuit (inverter [K] of fig.1 or microcontroller, column 11, lines 59-62) receives from a voltage sensor [G] signals representing voltage level (such as line voltage variations, column 5, lines 24-43, column 7, lines 28-49) in the power system [10].

Bogwicz et al. do not mention a value is equal to the product of a reference value multiplied by the ratio between the starting voltage and a present voltage.

Aubrey teaches a value is equal to the product of a reference value (such as an applied voltage V1 or V2, see fig.2) multiplied by the ratio (80% of applied voltage, column 1, lines 51-59) between the starting voltage (such as auxiliary winding voltage V1, fig.2a) and a present voltage (such as a main winding voltage V1, fig.2c).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a voltage ratio multiplied to a reference value of Aubrey in the system of Bogwicz et al. because the calculation is used to operate a relay switch (column 2, lines 110-113), which reduces surge current on starting (column 1, lines 69-72).

In regard to claim 9, the limitations for the base claim are explained in the rejection of claims 1, 2, 4 and 8.

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bogwicz et al.

In regard to claim 3, Bogwicz et al. teaches a starting device [14], wherein the reference value (column 1, lines 38-42) corresponds to the ratio (such as current proportional to voltage, column 5, lines 24-43) between a running current level (such as 20 amps for a low speed run winding curve 262, see fig.2, column 9, lines 10-11) drawn by the stator (such as a motor housing, column 4, lines 16-41) in a motor [M] running condition (low/high speed, column 3, lines 22-35) and a starting current level (such as 35 amps for a start winding curve 250, see fig.2, column 9, lines 37-39) in at least one of the expected load conditions characteristic of the motor [M] (such as the speed characteristics, see fig.2) and of the power system [10] voltage.

In regard to claim 4, Bogwicz et al. teaches a starting device [14], wherein the control unit such as a control circuit of fig.1 instructs the opening (deactivation, column 3, lines 15-16, 44-47 and column 2 lines 55-58, 64-66) of the running switch [A] (fig.1b) and starting switch [B] (fig.1a) when the ratio between the present current level and starting current level is superior to a value (sensed current exceeds a value, column 1, lines 35-48, increases/decreases, column 5, lines 32-44) after a maximum time interval previously defined for ending the motor start has elapsed (such as deactivation of a motor [M] start winding [42] determined by a microcontroller, column 11, lines 59-62).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTONY M. PAUL whose telephone number is

(571)270-1608. The examiner can normally be reached on Mon - Fri, 7:30 to 5, Alt. Fri, East. Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP AP 1/25/2008

LINCOLN DONOVAN
SUPERVISORY PATENT EXAMINER